



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/782,118	02/13/2001	Dae-Sik Oh	1615	1758

28005      7590      03/22/2004  
SPRINT  
6391 SPRINT PARKWAY  
KSOPHT0101-Z2100  
OVERLAND PARK, KS 66251-2100

EXAMINER

D AGOSTA, STEPHEN M

ART UNIT	PAPER NUMBER
----------	--------------

2683

3

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/782,118

Applicant(s)

OH, DAE-SIK

Examiner

Stephen M. D'Agosta

Art Unit

2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: .

Art Unit: 2683

## **DETAILED ACTION**

### ***Drawings***

The drawings were received on 2-13-01 and have been reviewed by the draftsman and examiner.

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 2-13-01 is in compliance and accordingly, the information disclosure statement is being considered by the examiner.

### ***Claim Objections***

Claim 14 objected to because of the following informalities: The ability for the invention to work in a vehicle that is owned or not owned by the test user has no bearing on the invention (How can this requirement be enforced? Why wouldn't the invention work if placed in a vehicle under no agreement?). This claim should be cancelled or re-written. Appropriate correction is required. Failure to correct this claim will lead to a USC 112 rejection.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1, 2, 4-8, 13, 15-16 and 19-22** rejected under 35 U.S.C. 103(a) as being unpatentable over Vambaris et al. US 5,930,707 and further in view of O'Donnell US 6,266,514 and Nagel et al. US 6,295,460 (hereafter Vambaris, O'Donnell and Nagel).

Art Unit: 2683

As per **claims 1 and 15**, Vambaris teaches a monitoring method for wireless network (title) comprising:

Operating a first mobile station function to establish diagnostic data concerning operation of a wireless network (abstract, figure 1, #3 and figure 2, #11 and C2, L20 to C3, L39)

**But is silent on**

Operating a location-determining mechanism to establish location data corresponding to diagnostic data

Operating a second mobile station to communicate the diagnostic data and location data to a remote entity via a communication path comprising an air interface.

The examiner notes that location determination of a cell phone is critical for this operation since the technician must be able to correlate test data with the location of said tests. One skilled in the art knows that during a cell phone call, the MSC queries the HLR (or VLR) to determine the location of the cell phone. Hence Vambaris' invention inherently determines the location of the test transceiver based on a test call being made in the network. **O'Donnell** teaches cell network testing whereby the location of a mobile is determined during tests (abstract) and use of GPS (C1, L50 to C2, L2). The examiner also points out that the applicant discloses use of GPS for mobile phone location determination in their specification (page 7, L12-16) which is known in the art. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Vambaris, such that location is determined, to provide means for the system to know where a user is at all times for typical cellular operations supporting a mobile user.

Vambaris does teach the Test Unit (figure 1, #4) as having a "wired" communication path (#54) back to the Central Control station (#1). One skilled in the art can replace this wired link with a wireless link (eg. via a cell phone and modem in the test unit computer). **Nagel** teaches a modem being incorporated into a laptop computer which is connected to a cell phone for data transmission (abstract and figures 1b and 2).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the combination of Vambaris and O'Donnell, such that a

Art Unit: 2683

wireless link is used, to provide the user with the ability to roam freely during communications.

As per **claim 2**, Vambaris teaches a monitoring method for wireless network (title) comprising:

Communicating from a first mobile station to a computer a set of diagnostic data concerning operation of a wireless network (abstract, figure 1, #3 and figure 2, #11 and C2, L20 to C3, L39);

**But is silent on**

Communicating the diagnostic data from the computer to a second mobile station; and

Communicating the diagnostic data from the mobile station to a remote entity, via a communication path comprising an air interface.

Vambaris does teach the Test Unit (figure 1, #4) as having a "wired" communication path (#54) back to the Central Control station (#1). One skilled in the art can replace this wired link with a wireless link (eg. via a cell phone and modem in the test unit computer). **Nagel** teaches a modem being incorporated into a laptop computer which is connected to a cell phone for data transmission (abstract and figures 1b and 2). Also, Vambaris' system can transmit data to a Remote Control Station/remote entity (C4, L12-16 and figure 1) as one skilled knows that the test data can be sent to ANY location via communication link (see O'Donnel above).

It would have been obvious to one skilled in the art at the time of the invention to modify Vambaris, such that data is communicated to a second location and to a remote entity wirelessly, to provide means for sending the diagnostic data to a remote location/user via a wireless system which un-tethers the test personnel so they can roam freely when testing.

As per **claim 4**, Vambaris in view of Nagel teaches claim 3 wherein the remote entity communicates the reporting-logic to the second mobile station (abstract teaches the test unit/remote entity initiates test program and monitors receipt of audio signal/test data).

Art Unit: 2683

As per **claims 5-6, 13 and 19-20**, Vambaris in view of Nagel teaches claim 2/5, **but is silent on** further comprising:

Receiving into the computer location data indicative of a location of the first mobile station corresponding to the diagnostic data

Communicating the location data from the computer to the second mobile

Communicating the location data from the second mobile station to the remote entity via the communication path, thereby indicating to the remote entity the location of the first mobile station to the diagnostic data.

Vambaris does teach the Test Unit (figure 1, #4) as having a "wired" communication path (#54) back to the Central Control station (#1). One skilled in the art can replace this wired link with a wireless link (eg. via a cell phone and modem in the test unit computer). **Nagel** teaches a modem being incorporated into a laptop computer which is connected to a cell phone for data transmission (abstract and figures 1b and 2).

The examiner notes that location determination of a cell phone is critical for this operation since the technician must be able to correlate test data with the location of said tests. One skilled in the art knows that during a cell phone call, the MSC queries the HLR (or VLR) to determine the location of the cell phone. Hence Vambaris' invention inherently determines the location of the test transceiver based on a test call being made in the network. **O'Donnell** teaches cell network testing whereby the location of a mobile is determined during tests (abstract) and use of GPS (C1, L50 to C2, L2). The examiner also points out that the applicant discloses use of GPS for mobile phone location determination in their specification (page 7, L12-16) which is known in the art.

Vambaris' system can transmit data to a Remote Control Station/remote entity (C4, L12-16) as one skilled knows that the test data can be sent to ANY location via communication link (see O'Donnell above).

**With further regard to claim 13**, Vambaris is **silent on** mounting first/second phones and computer in a vehicle. Agilent Technologies Wireless Network Installation and Operations brochure teaches a mobile test system used in a vehicle (page 3, both columns and upper left picture shows person performing tests from a car/truck).

Art Unit: 2683

It would have been obvious to one skilled in the art at the time of the invention to modify the combination of Vambaris and Nagel, such that the location of the phone is determined and a second wireless phone is used (while being mobile), to provide means for correlating test data to a specific location and for "un-tethering" the technician by providing roaming capability with a wireless test system.

As per **claims 7 and 21**, Vambaris in view of Nagel and O'Donnell teaches claim 6/20 **but is silent on** sending the data and location via FTP to the remote entity.

The examiner takes **Official Notice** that FTP is an application used by TCP/IP networks for transmitting files from one location to another and would be used by a system (eg. Microsoft Windows applications) that transmit data via the PSTN/Internet via wired/wireless links.

It would have been obvious to one skilled in the art at the time of the invention to modify Vambaris, such that FTP is used, to provide means for using a known TCP/IP application to transfer test data files from one computer to another.

As per **claim 8**, Vambaris in view of Nagel and O'Donnell teaches claim 5 **but is silent on** wherein receiving location data comprises receiving the location from a GPS transceiver.

The examiner notes that location determination of a cell phone is critical for this operation since the technician must be able to correlate test data with the location of said tests. One skilled in the art knows that during a cell phone call, the MSC queries the HLR (or VLR) to determine the location of the cell phone. Hence Vambaris' invention inherently determines the location of the test transceiver based on a test call being made in the network. **O'Donnell** teaches network monitoring whereby operator staff drive throughout the network and conduct and record call quality checks. A conventional system such as TEMS (Test Mobile System) is used to perform the monitoring. TEMS uses mobiles modified with specialized software for monitoring parameters of the radio environment. Radio environment monitoring is initiated by an operator who connects the modified mobile to a personal computer via a standard RS-232 serial connection. A GPS receiver is also connected to the PC to provide mobile position information. Survey data is then compiled during the monitoring process

Art Unit: 2683

including data such as the geographic locations associated with signal strengths, bit error rates, interference, or dropped calls. Post-processing of the data gathered by TEMS is performed in a geographical information system (GIS) that enables the operator to visualize survey data with different colors and symbols that are indicative of status and operation of the mobile (C1, L50 to C2, L2). The examiner also points out that the applicant discloses use of GPS for mobile phone location determination in their specification (page 7, L12-16) which is known in the art.

It would have been obvious to one skilled in the art at the time of the invention to modify Vambaris, such that GPS is used, to provide means for determining mobile position/location by multiple technologies.

As per **claim 16**, Vambaris teaches a monitoring method for wireless network (title) comprising:

Communicating from a first mobile station to a computer a set of diagnostic data concerning operation of a wireless network (abstract, figure 1, #3 and figure 2, #11 and C2, L20 to C3, L39);

**But is silent on**

Communicating the diagnostic data from the computer to a second mobile station; and

Communicating the diagnostic data from the mobile station to a remote entity, via a communication path comprising an air interface.

Vambaris does teach the Test Unit (figure 1, #4) as having a "wired" communication path (#54) back to the Central Control station (#1). One skilled in the art can replace this wired link with a wireless link (eg. via a cell phone and modem in the test unit computer). **Nagel** teaches a modem being incorporated into a laptop computer which is connected to a cell phone for data transmission (abstract and figures 1b and 2). Also, Vambaris' system can transmit data to a Remote Control Station/remote entity (C4, L12-16 and figure 1) as one skilled knows that the test data can be sent to ANY location via communication link (see O'Donnel above).

It would have been obvious to one skilled in the art at the time of the invention to modify Vambaris, such that data is communicated to a second location and to a remote



Art Unit: 2683

entity wirelessly, to provide means for sending the diagnostic data to a remote location/user via a wireless system which un-tethers the test personnel so they can roam freely when testing.

As per **claim 22**, Vambaris teaches claim 16 **but is silent on** a plurality of mobile testing reporting systems that report test data back to a common remote entity.

More than one Vambaris system can be put into operation at the same time and would communicate back to a Central Control station (as shown in figure 1 and disclosed in C4, L12-16).

It would have been obvious to one skilled in the art at the time of the invention to modify Vambaris, such that a plurality of units can be operated at once, to provide means for testing many BTS's at once to reduce the time it takes to test the network.

**Claim3** rejected under 35 U.S.C. 103(a) as being unpatentable over Vambaris/O'Donnell/Nagel and further in view of Snapp US 5,875,398 (hereafter Snapp).

As per **claim 3**, Vambaris in view of O'Donnell and Nagel teaches claim 2 **but is silent on** further comprising:

Communicating reporting-logic to the second mobile station via a communication path comprising an air interface and

Communicating the reporting-logic from the second mobile station to the computer.

Vambaris teaches the test transceiver/phone (figure 1, #3) connecting to the test unit/computer (#4) via "line" (#51-53 and C2, L40-45, C2, L64-65 and C3, L19-25). The examiner interprets both wired and wireless communications as being equivalent since each can replace the other. One skilled in the art would use a wireless connection here to un-tether the technician from the mobile phone.

In making this link wireless, the first mobile would then need to communicate with the second mobile in order to transmit test data to the computer (ultimately for transmittal to the Central Control Station, figure 1, #1). Snapp teaches a method in which two cell phone communicate directly (abstract and figure 2).

Art Unit: 2683

It would have been obvious to one skilled in the art at the time of the invention to modify the combination of Vambaris, O'Donnell and Nagel, such that the first/second phone communicate test data via an air link, to provide means for the test unit to be remote from the test transceiver.

**Claims 9-12, 14, 17-18 and 23** rejected under 35 U.S.C. 103(a) as being unpatentable over Vambaris/O'Donnell/Nagel and further in view of Agilent Technologies Wireless Network Installation & Operations Brochure (hereafter Agilent).

As per **claim 9**, Vambaris in view of O'Donnell and Nagel teaches claim 5 **but is silent on** wherein the diagnostic data comprises radio frequency parameters.

Vambaris teaches transmittal of audio tone(s) which reads on radio frequency parameters since an audio tone is an analog signal comprised of a certain frequency. Vambaris can also test digital signals as well. [C3, L3-40].

Agilent teaches test support for many different networks including 3G (page 3, both columns) and parameters (page 4, both columns).

It would have been obvious to one skilled in the art at the time of the invention to modify the combination of Vambaris, O'Donnell and Nagel, such that the data comprises radio frequency parameters, to provide means for fully analyzing the test signal.

As per **claims 10 and 23**, Vambaris in view of O'Donnell and Nagel teaches claim 7/16 **but is silent on** the air interface is G3-compliant.

Agilent teaches test support for many different networks including 3G (page 3, Left hand column).

It would have been obvious to one skilled in the art at the time of the invention to modify the combination of Vambaris, O'Donnell and Nagel, such that 3G systems can be tested, to provide means for testing many different wireless systems, including the next generation systems of the future.

As per **claim 11**, Vambaris in view of O'Donnell and Nagel teaches claim 5 **but is silent on** further comprising, upon receipt of the diagnostic data and location data at the remote entity,

Analyzing the diagnostic data

Art Unit: 2683

Determining that at least a portion of the diagnostic data meets a threshold and Responsively providing an alert message.

Agilent teaches a mobile test system that can collect test data and export it to another computer for full analysis (page 3, Right hand column). One skilled in the art would provide means for providing quick feedback (eg. automated messages) to field technicians so as to fix any problems found (via the same communications used by said test system, eg. wireless communications as taught by O'Donnell).

It would have been obvious to one skilled in the art at the time of the invention to modify the combination of Vambaris, O'Donnell and Nagel, such that the data can be analyzed at a remote entity and an alert message is sent, to provide means for fully analyzing the test data and providing alarm messages as dictated by the data for troubleshooting/fixing by a technician.

As per **claim 12**, Vambaris in view of O'Donnell and Nagel teaches claim 5 **but is silent on** further comprising:

After receipt of diagnostic data and location data at the remote entity,

Providing an output report indicative of at least the diagnostic data.

Agilent teaches a mobile test system that can collect test data and export it to another computer for full analysis (page 3, Right hand column). One skilled in the art would provide means for generating a report outlining the test data along with "pass/fail" cell sites which can be provided to management and field technicians alike.

It would have been obvious to one skilled in the art at the time of the invention to modify the combination of Vambaris, O'Donnell and Nagel, such that a report is generated, to provide means for putting the data in the form of a report for management/technicians to use.

As per **claim 14**, Vambaris in view of O'Donnell and Nagel teaches claim 5 **but is silent on** further comprising:

Entering into an agreement with an owner or operator of the vehicle,

Establishing the vehicle will carry the combination around the geographic area.

Agilent teaches a mobile test system that be placed in a mobile vehicle/car/truck (page 3, both columns and upper left picture shows testing from a car/truck). The

Art Unit: 2683

examiner notes that the vehicle can be owned/operated by the cellular company, leased from an independent operator/rental agency or a technician's personal vehicle.

It would have been obvious to one skilled in the art at the time of the invention to modify the combination of Vambaris, O'Donnell and Nagel, such that testing is performed in a vehicle which has been rented/leased, to provide means for the system to be used in a that is owned/not owned by the cell company.

As per **claim 17**, Vambaris in view of O'Donnell and Nagel teaches claim 16 **but is silent on** wherein the first/second mobile stations and computer are integrated together in a single unit.

Agilent teaches a mobile test system that can be either multiple parts (page 3 pictures show the unit as being several pieces) or a one-piece system (page 4, right column discloses two systems that can be one component, see both pictures).

It would have been obvious to one skilled in the art at the time of the invention to modify the combination of Vambaris, O'Donnell and Nagel, such that the system is integrated into a single unit, to provide ease of transport, setup and testing for the technician.

As per **claim 18**, Vambaris in view of O'Donnell and Nagel teaches claim 17 **but is silent on** wherein the single unit is mounted in a vehicle.

Agilent teaches a mobile test system used in a vehicle (page 3, both columns and upper left picture shows person performing tests from a car/truck).

It would have been obvious to one skilled in the art at the time of the invention to modify the combination of Vambaris, O'Donnell and Nagel, such that the system is mounted in a vehicle, to provide means for driving the test system around to test different BTS's in the network.

Art Unit: 2683

**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

1. Mount et al US006272337B1
2. Gourdin et al US005913162A
3. Nakamura US005943617A
4. Wing US005570373A
5. Sant et al. US006169896B1
6. Agostino et al. US006519452B1
7. Rahman US006571082B1
8. Kibria et al. US006584175B1

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 703-306-5426. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

SMD

3-16-04

